Limitations for conventional construction

BCCC 01

RISK CATEGORY

The use of the provisions for conventional light-frame construction shall not be permitted for Risk Category IV. (CBC 2308.1.1)

BCCC 02

AVERAGE LOADS

Average dead loads shall not exceed 15 psf. Live loads shall not exceed 40 psf. (CBC 2308.2)

BCCC 03

NUMBER OF STORIES

Structures of conventional light-frame construction shall not exceed **one story** above grade plane. (CBC 2308.12.1)

BCCC 04

IRREGULAR STRUCTURES

Conventional light-frame construction shall not be used in irregular portions of structures. Such irregular portions of structures shall be designed to resist the forces specified in Chapter 16 to the extent such irregular features affect the performance of the conventional framing system. (CBC 2308.12.6)

Please see Irregular Structures
Conventional Foundation systems

BCCC 05

CRIPPLE WALLS

Cripple walls having a stud height exceeding 14 inches shall be considered a story and shall be braced as required for braced wall lines in accordance with the required percentage of wall length required to be braced per braced wall line in Table 2308.12.4 (CBC 2308.12.4)

BCCC 06

NAILING OF BRACING

Spacing of edge nailing for required wall bracing shall not exceed 6 inches on center along the foundation plate and the top plate of the cripple wall. (CBC 2308.9.4.2)

BCCC 07

SILL PLATE ANCHORAGE

Sill plates shall be anchored with anchor bolts with steel plate washers between the foundation sill plate and the nut, or approved anchor straps load rated in accordance with Section 1716.1. (CBC 2308.12.8)

BCCC 08

NUTS AND WASHERS

Washers shall be a minimum of 0.229 inch by 3 inches by 3 inches in size. The hole in the plate washer is permitted to be diagonally slotted with a width of up to 3/16 inch larger than the bolt diameter and a slot length not to exceed 1 3/4 inches, provided a standard cut washer is placed between the plate washer and the nut. (CBC 2308.12.8)

BCCC 09

STEPPED FOOTINGS

Where the height of a required braced wall panel extending from foundation to floor above varies more than 4 feet, the provisions in Section 28.11.3.2 shall be followed. (CBC 2308.11.3.2)

BCCC 10

CONCRETE OR MASONRY

Concrete or masonry walls and stone veneer shall not extend above a basement. (CBC 2308.12.2)

conventional floor framing

BCCC 11

GIRDERS

Girders shall not be less than 4inches by 6inches for spans 6 feet or less, provided that girders are spaced not more than 8 feet on center. Spans for built up 2-inch girders shall be in accordance with Table 2308.9.5 or 2308.9.6.

Where girder is spliced over a support, an adequate tie shall be provided. The ends of beams or girders supported on masonry or concrete shall not have less than 3 inches of bearing. (CBC 2308.7)

BCCC 12

FLOOR JOIST

Spans for floor joists shall be in accordance with Table 2308.8(1) or 2308.8(2). (CBC 2308.8)

BCCC 13

BEARING

Except where supported on a 1-inch by 4-inch ribbon strip and nailed to the adjoining stud, the ends of each joist shall not have less than 3 inches on masonry. (CBC 2308.8.1)

BCCC 14

LATERAL SUPPORT

Joists shall be supported laterally at the ends and at each support by solid blocking except where the ends of the joists are nailed to a header, band or rim joist or to an adjoining stud or by other means. (CBC 2308.8.2)

BCCC 15

NOTCHING AND BORING

Notches on the ends of joists shall not exceed one-fourth the joist depth. Holes bored in joists shall not be within 2 inches of the top or bottom of the joist and the diameter of any such hole shall not exceed one-third the depth of the joist. Notches in the top or bottom of joists shall not exceed one sixth the depth and shall not be located in the middle third of the span. (CBC 2308.8.2)

BCCC 16

FRAMING AROUND OPENINGS

Trimmer and header joists shall be doubled, or of lumber of equivalent cross section, where the span of the header exceeds 4 feet. The ends of header joists more than 6 feet long shall be supported by framing anchors or joist hangers unless bearing on a beam, partition or wall. (CBC 2308.8.3)

BCCC 17

FLOOR SHEATHING

Structural floor sheathing shall comply with the provisions of Section 2304.7.1 (CBC 2308.8.6)

BCCC 18

UNDER-FLOOR VENTILATION

The space between the bottom of the floor joists and the earth under any building except spaces occupied by basements or cellars shall be provided with ventilation openings through foundation walls or exterior walls. The net area of ventilation openings shall not be less than 1 square foot for each 150 square feet of crawl-space area. (CBC 2308.8.7)
conventional wood wall framing

BCCC 19

WALL HEIGHT

Maximum floor-to-floor height shall not exceed 11 feet, 7 inches. Bearing wall height shall not exceed a stud height of 10 feet. (CBC 2308.2)

BCCC 20

BRACED WALL LINE SPACING

Spacing between interior and exterior braced wall lines shall not exceed 25 feet. (CBC 2308.12.3)

BCCC 21

BRACED WALL LINE SHEATHING

Braced wall lines shall be braced by one of the types of sheathing prescribed by Table 2308.12.4 (CBC 2308.12.4)

BCCC 22

BRACED WALL PANEL LENGTH

The sum of lengths of braced wall panels at each braced wall line shall conform to the required percentage of wall length required to be braced per braced wall line in Table 2308.12.4 (CBC 2308.12.4)

BCCC 23

BRACED WALL PANELS

Braced wall panels shall be distributed along the length of the braced wall line and start at not more than 8 feet from each end of the braced wall line. Panel sheathing shall be fastened to studs, top and bottom plates and at panel edges occurring over blocking. Wall framing to which sheathing used for bracing is applied shall be nominal 2-inch wide or larger members. (CBC 2308.12.4)

BCCC 24

BRACED WALL CONNECTIONS

Wind and seismic lateral forces shall be transferred from the roof and floor diaphragms to braced wall lines. (CBC 2308.3.2)

BCCC 25

BOTTOM PLATE CONNECTION

Braced wall line bottom plates shall be connected to joists or full depth blocking below in accordance with Table 2304.9.1 Item 6 or to foundations.

Where foundations are required, braced wall line sills shall be anchored to concrete or masonry foundations in accordance with CBC 2308.6

BCCC 26

TOP PLATE CONNECTION

Where joists and/or rafters are used, braced wall line top plates shall be fastened over the full length of the braced wall line to joists, rafters, rim boards or blocking above in accordance with Table 2304.9.1, Items 11, 12, 15 or 19, as applicable, based on the orientation of the joists or rafters to the braced wall line. (CBC 2308.3.2.2)

BCCC 27

BLOCKING

Blocking at joists with walls above shall be equal to the depth of the joist at the braced wall line. Blocking at rafters need not be full depth but shall extend to within 2 inches from the roof sheathing above. (CBC 2308.3.2.2)

BCCC 28

BRACED WALL LINE SUPPORT

Braced wall lines shall be supported by continuous foundations. (CBC 2308.3.4)

BCCC 29

SIZE, HEIGHT AND SPACING

The size, height and spacing of studs shall be in accordance with Table 2308.9.1(CBC 2308.9.1)

BCCC 30

UTILITY-GRADE STUDS

Utility-grade studs shall not be spaces more than 16 inches on center, or exceed 8 feet in height for exterior walls and load-bearing walls or 10 feet for interior non-load-bearing walls. (CBC 2308.9.1)

BCCC 31

STUD CONTINUITY

Studs shall be continuous from a support at the sole plate to a support at the top plate to resist loads perpendicular to the wall. (CBC 2308.9.1)

BCCC 32

CORNERS

Not less than three studs shall be installed at each corner of an exterior wall. (CBC 2308.9.2)

BCCC 33

TOP PLATES

Bearing and exterior wall studs shall be capped with double top plates installed to provide overlapping at corners and at intersections with other partitions. Plates shall be a nominal 2 inches in depth and have a width at least equal to the width of the studs. (CBC2308.9.2.1)

BCCC 34

END JOINTS

End joints in double plates shall be offset at least 48 inches, and shall be nailed with not less than eight 16d face nails on each side of the joint. (CBC 2308.9.2.1)

BCCC 35

PLATES OR SILLS

Studs shall have full bearing on a plate or sill not less than 2 inches in thickness having a width not less than that of the wall studs. (CBC 2308.9.2.4)

BCCC 36

BRACING

Braced wall lines shall consist of braced panels that meet the requirements of location, type and amount of bracing specified in Table 2308.9.3(1). (CBC 2308.9.3)

BCCC 37

OFFSET

Braced wall panels shall be in line or offset from each other by not more than 4 feet. Braced wall panels shall start not more than 12 1/2 feet from each end of a braced wall line. (CBC 2308.9.3)

BCCC 38

HEADERS IN EXTERIOR BEARING WALLS

Headers shall be provided over each opening in exterior-bearing walls. Headers shall be of two pieces of nominal 2-inch framing lumber set on edge as permitted by Table 2308.9.5 and nailed together in accordance with Table 2304.9.1 or of solid lumber of equivalent size. (CBC 2308.9.5.1)

Wall studs shall support the ends of the header in accordance with Table 2308.9.5. Each end of a lintel or header shall have a length of bearing not less than 1 ½ inches for the full width of the lintel. (CBC 2308.9.5.2)

BCCC 39

HEADERS IN INTERIOR BEARING PARTITIONS

Headers shall be provided over each opening in interior bearing partitions. The spans in Table 2308.9.6 are permitted to be used.

Wall studs shall support the ends of the header in accordance with Table 2308.9.5 or 2308.9.6 as appropriate. (CBC 2308.9.6)

BCCC 40

OPENINGS IN INTERIOR NONBEARING PARTITIONS

Openings in nonbearing partitions are permitted to be framed with single studs and headers. Each end of a lintel or header shall have a length of bearing of not less than 1 ½ inches for the full width of the lintel. (CBC 2308.9.7)

BCCC 41

CUTTING AND NOTCHING

In exterior walls and bearing partitions, any wood stud is permitted to be cut or notched to a depth not exceeding 25 percent of its width.

Cutting and notching to a depth not greater than 40 percent of the width of the stud is permitted in nonbearing partitions supporting no loads other than the weight of the partition. (CBC 2308.9.10)

BCCC 42

ANCHORAGE OF EXTERIOR MEANS OF EGRESS

Exterior egress balconies, exterior exit stairways and similar means of egress components shall be positively anchored to the primary structure at not over 8 feet on center or shall be designed for lateral forces. Such attachment shall not be accomplished by use of toe-nails or nails subject to withdrawal. (CBC 2308.12.7)

conventional roof-ceiling framing

The framing details required in this section apply to roofs having a minimum slope of three units vertical in 12 units horizontal or greater. (CBC 2308.10)

BCCC 43

ROOF TRUSSES AND RAFTERS

Roof trusses and rafters shall not span more than 40 feet between points of vertical support. (CBC 2308.2)

BCCC 44

JOIST SPANS

Allowable spans for ceiling joists shall be in accordance with Table 2308.10.2(1) or 2308.10.2(2) (CBC2308.10.2)

BCCC 45

RAFTER SPANS

Allowable spans for rafters shall be in accordance with Table 2308.10.3(1), 2308.10.3(2), 2308.10.3(3), 2308.10.3(4), 2308.10.3(5) or 2308.10.3(6). (CBC 2308.10.3)

BCCC 46

RAFTERS

Rafters shall be framed directly opposite each other at the ridge. (CBC 2308.10.4)

BCCC 47

RIDGES

There shall be a ridge board at least 1-inch nominal thickness at ridges and not less in depth than the cut end of the rafter. (CBC 2308.10.4)

BCCC 48

HIPS AND VALLEYS

At valleys and hips, there shall be a single valley or hip rafter not less than 2-inch nominal thickness and not less in depth than the cut end of the rafter. (CBC 2308.10.4)

BCCC 49

JOIST AND RAFTER CONNECTIONS

Ceiling joists and rafters shall be nailed to each other and the assembly shall be nailed to the tip wall plate in accordance with Table 2304.9.1 and 2308.10.1. (CBC 2308.10.4.1)

BCCC 50

CEILING JOIST CONTINUITY

Ceiling joists shall be continuous or securely joined where they meet over interior partitions and fastened to adjacent rafters in accordance with Tables 2308.10.4.1 and 2304.9.1. (CBC 2308.10.4.1)

BCCC 51

RAFTER TIES

Where ceiling joists are not parallel to rafters, an equivalent rafter tie shall be installed in a manner to provide a continuous tie across the building, at a spacing of not more than 4 feet on center. (CBC 2308.10.4.1)

Rafter tie connections shall be based on the equivalent rafter spacing in Table 2308.10.4.1.

BCCC 52

NOTCHES AND HOLES

Notching at the ends of rafters or ceiling joists shall not exceed one-fourth the depth. Notches in the top or bottom of the rafter or ceiling joist shall not exceed one-sixth the depth and shall not be located in the middle one third of the span.

Exception: A notch not exceeding one third of the depth is permitted in the top of the rafter or ceiling joist not further from the face of the support than the depth of the member.

Holes in rafters or ceiling joists shall not be within 2 inches of the top and bottom and their diameter shall not exceed one-third the depth of the member. (CBC 2308.10.4.2)

BCCC 53

FRAMING AROUND OPENING

Trimmer and header rafters shall be doubled, or of lumber of equivalent cross section, where the header exceeds 4 feet.

The ends of header rafters more than 6 feet long shall be supported by framing anchors or rafter hangers unless bearing on a beam, partition or wall. (CBC 2308.10.4.3)

BCCC 54

PURLINS

The maximum span of 2-inch by 4-inch purlins shall be 4 feet. The maximum span for the 2-inch by 6-inch purlin shall be 6 feet, but in no case shall the purlin be smaller than the supported rafter.

Struts shall not be smaller than 2-inch by 4-inch members. The unbraced length of struts shall not exceed 8 feet and the minimum slope of the struts shall not be less than 45 degrees from the horizontal. (CBC 2308.8.5)

BCCC 55

BLOCKING

Roof rafters and ceiling joists shall be supported laterally to prevent rotation and lateral displacement (CBC 2308.10.6)

BCCC 56

ROOF SHEATHING

Roof sheathing shall be in accordance with Tables 2304.7(3) and 2304.7(5) for wood structural panels, and Tables 2304.7(1) and 2304.7(2) for lumber. (CBC 2308.10.8)